

Better Living Through the Placebo Effect

It pays to believe

LATE in his life the famous chemist Linus Pauling devoted himself to curing the common cold. Perhaps, lying in bed one day filling paper bags with used tissues, he calculated just how much suffering this run-of-the-mill virus inflicts on humanity. Using statistics from standard medical texts, he would have concluded that over a lifetime the average person is subjected to some 24,000 hours of coughing, throat pain, congestion, and headache from colds. Though each cold is, of course, a relatively minor illness, most people's total accumulation of suffering from colds is immense. If he could cure the common cold, Pauling must have thought, or even alleviate its symptoms, he would be doing humanity a great service. At the age of seventy he claimed to have the answer: in his book *Vitamin C and the Common Cold* (1970) he argued that large doses of vitamin C could prevent the onset of colds or help to minimize their symptoms.

But there was a problem: Pauling had no real evidence to support his claim. On the contrary, at least sixteen studies, carried out before and since, have shown that vitamin C does not prevent colds; at best it may slightly reduce a cold's symptoms, but even this is widely disputed. Pauling's own laboratory came up with only the anemic finding that high doses of the vitamin could reduce the average number of symptomatic days per cold from 7.8 to 7.1.

Pauling's colleagues tried to be respectful to the man once considered the world's greatest scientist, but in private many snickered. Pauling must be senile. It was a shame to end such a brilliant career on a false note.

My brother, a doctor who also has a Ph.D. in neurophysiology, offers an alternative explanation. Perhaps Pauling was neither senile nor misguided. What if he was using psychology, instead of chemistry, in a culminating act to alleviate human suffering? He may have been counting on the drug that Steve Martin touted in one of his early stand-up routines, a pill that



made Martin feel ecstatic. "It's called," Martin would intone in a dramatic voice, "Plah-Cee-Bo."

Vitamin C may have no physiological effect on colds, but there is evidence for a strong psychosomatic component in people's susceptibility to colds. Researchers have shown that those who take a placebo in the early stages of a cold experience milder symptoms.

Some studies have found that the placebo effect can also palliate symptoms of asthma, sciatica, and even congestive heart failure and cancer. Cancer patients whose disease has spread to the bones are often treated with radioactive isotopes, which chemically bind to bone and alleviate pain, probably by killing adjacent

nerve endings. In numerous studies some patients were injected with a radioactive isotope and others with a placebo. Approximately 75 percent of those who got the chemical treatment reported partial or complete relief from their pain. However, about 30 percent of the placebo group also reported relief.

In the 1950s, in order to test the effectiveness of a new surgical treatment for angina, surgeons at the University of Kansas

by Marshall Jon Fisher

Medical Center performed real operations on one group of patients and "placebo operations" on another group. The placebo patients were told that they were going to have heart surgery. They were given a local anesthetic, and incisions were made in their chests. But no therapeutic procedure was performed—the surgeon simply fiddled around a bit in the chest wall for show. The patients left the hospital with scars and with pain at the incision sites; they had no reason to believe they had not undergone the proper surgery. Seventy percent of the patients who had had the real surgery reported long-term improvement; *all* the placebo patients did. Many declared themselves fully cured and returned to physically demanding jobs.

Pauling would certainly have been aware of the placebo research. He was also undoubtedly aware of the authority he commanded as the winner of Nobel Prizes in chemistry (1954) and

peace (1962). If he declared that vitamin C prevented colds, people would believe it. And if they believed it, then it would be true. And so, my brother's theory goes, he pronounced his "discovery," knowing that it was false but that it would nonetheless alleviate an enormous amount of suffering until a real cure could be found.

Pauling claimed that he himself took 12,000 milligrams of vitamin C a day, and 40,000 whenever he felt a cold coming on (the Food and Drug Administration's recommendation is sixty milligrams a day). He spent decades defending his theory and his reputation. He also declared that vitamin C was effective in treating heart disease and other serious illnesses. And he swore that vitamin C had enabled him to fight off prostate cancer for twenty years. (He succumbed to the disease in 1994, at the age of ninety-three.) Most scientists took all this as a sign of senility. But, one could argue, Pauling would have *had* to feign absolute belief in order to foment a worldwide placebo effect.

In the end, the fact that Pauling advocated such high doses of vitamin C—much higher than needed for a placebo effect, and so high that dangerous side effects could occur—casts doubt on this explanation. It's more likely, my brother admits, that Pauling did take leave of some of his faculties. Still, the Pauling Placebo, whether intentional or not, has surely worked. Over the years, Pauling's declarations have diffused throughout the public consciousness. Millions of people, many of whom have never heard of Linus Pauling, have taken vitamin C to ward off colds. And many of them have unquestionably benefited.

Another supposed antidote to the common cold recently hit the market, in the form of zinc lozenges. A 1996 study published in the *Annals of Internal Medicine* showed that cold patients who took zinc lozenges were relieved of symptoms three days sooner than patients who did not. A few other studies confirmed this result, but an equal number found that zinc had no effect. Many doctors, including my brother, suspect that the zinc lozenges, too, are mainly placebos. Not that that diminishes their effectiveness. In fact, my brother starts popping zinc whenever he feels a sore throat coming on. This may be the first time someone has deliberately used a placebo to cure himself. Once I made the mistake of referring to the refut-

ative studies, and my brother cut me off. "Don't talk about that!" he said. "You'll ruin my placebo effect!"

Those of us unable to get around this Catch-22—unable, that is, to believe something that we know will be true only if we believe it—pay for our clearheadedness. Neither vitamin C nor zinc staves off our colds; we stay home drinking tea and mixing and matching antihistamines and decongestants, cough suppressants and expectorants, while our more gullible friends are out enjoying tennis and the theater. And our pain is not limited to the physical. For instance, it must be a great comfort to believe in God. But how can one believe simply because one knows that belief would provide comfort?

The placebo-resistant are also less successful in life. Most people agree that self-confidence is an advantage in almost any endeavor. It helps talented people to fulfill—and to market—their talent; it also helps people *without* much talent to succeed beyond any reasonable expectation. Many people, though, the talented and the untalented alike, are less successful than they might be, owing to low self-esteem. They are unable to believe in themselves just because that belief would be self-fulfilling. Instead they watch helplessly as others rise through the ranks above them, buoyed by robust, if sometimes delusional, self-assurance.

The last few times I've had a cold, it's been followed by a cold sore that made me recall my scratchy throat and stuffed nose with nostalgia. When I complained to my brother, he told me about some studies that have shown vitamin E and vitamin C with citrus bioflavonoids to be effective against cold sores. The next time I saw him, he gave me a bottle of each. I scrutinized his expression. Was he on the level? Or was he trying to ease my suffering by creating a placebo effect? I had never heard of the studies he'd mentioned, but as a layperson, I probably wouldn't have. It didn't seem worth spending hours in a medical library just to try to prove the pills useless.

The next time I got a cold, I took the vitamins. And I didn't get a cold sore. I started taking the vitamins whenever I felt the slightest symptoms of a cold, and I haven't developed a cold sore since. Did the vitamins work? Did my belief in the vitamins work? Or have I just been lucky this year? I don't know, and I don't want to know. ☼